



# Teaching Critical Thinking in the Age of AI

Presented by

**Wendy Curty, M.Ed., NBCT**  
**Davidson Early College High School**  
**Davidson County Schools, NC**

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Using AI Responsibly  
to Develop Critical  
Thinkers and Writers

Future Ready—Empowering  
Learners for Success

## Opening Question:

Students can now generate an essay in seconds. So how do we ensure they are still doing the thinking?

## Opening Discussion

**What excites you about AI?**

**What concerns you about AI & learning?**

**Who is doing the thinking?**





# The Real Challenge

AI is already part of students' world. The question is no longer whether they use it, but how we guide them to use it well.

## Key Message

**The goal isn't to ban AI or embrace it blindly. The goal is to keep students at the center of learning.**

### Fixed Mindset Regarding AI

- Equating AI solely to cheating
- Assuming students lose critical thinking
- Resisting pedagogical shifts

### Should students use AI? The Reality:

AI is already embedded in students' daily lives; ignoring it leaves them without the guidance they need for success.

### Growth Mindset

- AI is a collaborator, not a replacement. (AI as partner)
- Skills can be upgraded
- AI hallucinations, errors, or failed prompts as learning opportunities
- Critique is essential
- adaptability is a superpower

### How can AI strengthen learning?

It can empower students to evaluate, question, and direct AI, keeping the human mind at the center of every task.

# Understanding AI Before We Teach With It:

## What Exactly Is AI?

Artificial Intelligence is technology that can recognize patterns in large amounts of data and generate responses based on those patterns.

- AI doesn't "think" like humans.
- It predicts what words, ideas, images, or responses are most likely to come next based on the information it has been trained on.

**How might you define AI for students?**

# What AI Can do:

## AI Can Help Students:

- ✓ Generate ideas
- ✓ Brainstorm possibilities
- ✓ Summarize information
- ✓ Provide feedback
- ✓ Offer alternative perspectives
- ✓ Support revision
- ✓ Model examples
- ✓ Ask questions that prompt thinking

### **Key Point:**

AI can support learning processes.

# What AI Can't Do:

## AI Cannot Help Students

- ✗ Think independently
- ✗ Understand like a human
- ✗ Replace critical thinking
- ✗ Determine truth
- ✗ Verify sources automatically
- ✗ Understand personal experiences
- ✗ Create authentic student voice
- ✗ Make ethical decisions for students

### **Key Point:**

AI can generate responses.

Students must evaluate them.

# The Human Difference

What Students Bring That AI Cannot

**"Which of these skills becomes even more important in an AI-rich world?"**

**What students bring that AI cannot:**

- Curiosity
- Creativity
- Judgment
- Personal experience
- Empathy
- Values
- Critical thinking
- Original voice

# Why This Matters

**If students believe AI is always right:**

✗ They stop questioning.

**If students understand AI's limitations:**

✓ They learn to evaluate.

✓ They learn to verify.

✓ They learn to think critically.

- **Before students can use AI responsibly, they need to understand both its strengths and its limitations.**

**Key Message**

**Students need to understand AI's strengths and limitations before they can use it responsibly.**

# Our Goal

Defining the Educator's Mission in the Age of AI

Our role goes beyond teaching AI tools. It's about preparing students with the skills, values, and a growth mindset to thrive in a rapidly changing world.

- Many employers are now requiring that employees use AI tools. Fully 64% of employers are encouraging the use of AI, according to [Owl Labs](#), and 58% are requiring its use, according to [HRTech Edge](#)

## Critical Thinkers

Students who analyze, question, and evaluate information instead of simply accepting AI-generated output at face value.

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## Thoughtful Communicators

Students who express their own ideas clearly and effectively, using AI as a support tool, not a substitute for their voice.

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## Ethical Decision-Makers & Effective Writers

Students who uphold academic integrity, take ownership of their work, and use AI as a tool for developing and demonstrating their thinking in writing and all other forms of communication.

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## Responsible Technology Users

Students who understand when, why, and how to use AI responsibly: applying digital citizenship principles in every interaction.



# Guiding Question

**How can we help students use AI in ways that strengthen thinking rather than replace it?**

**Where does thinking happen?**

**Who is making decisions?**

**How is student voice preserved?**

# Start Here:

## Teach Ethical AI Use First

Before students use AI, they need a framework. Just as we teach research skills and digital citizenship, we must teach responsible AI use.



### Research Skills & Source Evaluation

Students learn to find, evaluate, and cite credible sources before drawing conclusions or accepting information at face value.



### Digital Citizenship

Responsible online behavior, ethical communication, and understanding the impact of technology on individuals and communities.



### Academic Integrity

Students remain responsible for their ideas, reasoning, and final work. AI supports learning—it does not replace student effort or thinking.

# Ethical AI Principle #1: Transparency

## Students Must Be Able to Explain Their AI Use

When did they use AI? How did they use it? Why did they use it? Ask: "Could a student clearly describe their AI use to a teacher, parent, or administrator?"

**AI use Acknowledgement:** I acknowledge the use of **(Insert system(s) names and link)** to **(specific uses of generating AI)**. The prompts used include **(List or link of the prompts)**. The output from these prompts was used to **(Explain use)**.



# Ethical AI Principle #2: Academic Integrity

## AI Supports Learning, Not Replaces It

Students remain responsible for their ideas, their reasoning, and their final work. Key reflection: "Did AI help me think, or did it do the thinking for me?"

[Using AI Ehtically.](#)



# Ethical AI Principle #3: Human Ownership

Your Ideas. Your Voice.  
Your Work.

Students own their ideas, decisions, revisions, and voice. AI assists-but the learning belongs to the student, not the tool. AI is a TOOL, not CRUTCH....

[Ethical use Checklist](#)





# Ethical AI Principle #4: Bias & Accuracy

AI is not always right. Students must critically evaluate AI-generated content, question its assumptions, and seek out missing perspectives before accepting any output as fact. [AI Accuracy and Bias Check:](#)

- **Verify information**

- **Question assumptions**

- **Evaluate credibility**

# Ethical AI Principle #5: Privacy & Digital Citizenship

Students should never input personal or sensitive information into AI tools. Responsible digital citizenship means protecting privacy in every interaction.

- **No personal information**

- **No passwords or sensitive data**

- **Practice digital citizenship**



# The Question Students Should Always Ask Themselves: A Simple Classroom Norm for Every AI Interaction

"Is AI helping me think? Or is it doing the thinking for me?"  
Encourage students to ask this question before, during,  
and after every AI interaction as a default habit of mind.

EVERY FRAMEWORK

INTERACTIVE FRAMEWORK

## Key Message

Every AI interaction should begin with the question:  
"Is AI helping me think, or is it doing the thinking for  
me?"



# What Research Tells Us

## Research-Backed Insights on AI and Learning

The tool doesn't create learning, students' active engagement does. AI is most effective when learners bring curiosity, intention, and critical judgment to every interaction.

### AI Helps When Students...

Students who evaluate ideas and question information show deeper comprehension and stronger critical thinking when AI is used as a learning tool.

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### Reflect on Decisions

When students pause to reflect on decisions made during AI interactions, they build metacognitive skills essential for lifelong learning.

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### Revise Work & Justify Thinking

Research shows students who revise AI-assisted work and justify their reasoning develop stronger writing skills and deeper ownership of their ideas.

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### Key Takeaway

AI amplifies learning only when students remain the thinkers. **Evaluate, question, reflect, revise, and justify:** these are the habits that make AI a powerful educational partner.



# AI as a Thinking Partner

When used well, AI becomes a scaffold for deeper thinking, not a substitute for it. Here's how AI can support student learning.

## **Key Message**

**AI doesn't create learning. Student engagement creates learning.**

## **Explore ideas**

Students use AI to brainstorm and expand their initial ideas before developing their own original thinking and arguments.

## **Generate questions**

Students prompt AI to help them ask better questions, deepening inquiry and driving more meaningful research and reflection.

## **Consider alternative viewpoints**

Students ask AI to present opposing views, then evaluate and respond to strengthen their own reasoning and perspective.

## **Identify reasoning gaps**

Students review AI feedback to spot weaknesses in their logic, then revise and justify their thinking independently.

# Audience Reflection

## What Types of Thinking Should Never Be Outsourced to AI?

Take a moment to reflect: Which thinking skills are most at risk in your classroom? What structures do you have in place to protect them?

### **Complex Thought**

Breaking down complex information, examining evidence, and drawing reasoned conclusions must remain in the hands of the learner.

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### **Analysis**

Weighing options, judging quality, and determining value requires human judgment that AI cannot authentically replicate.

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### **Decision-Making & Reflection**

Choosing a course of action and reflecting on one's own learning process are deeply personal acts that define student growth and ownership.

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### **Personal Insight**

Authentic voice, lived experience, and individual perspective cannot, and should not, be generated by AI. These are the heart of student work.

# Using AI as a tool in Writing

Writing is a cognitive process. AI should support the writing journey, not bypass it. When students write, they are actively building understanding.

- **Clarify ideas**

- **Develop reasoning**

- **Build arguments**



# Before, During, and After

## A Simple Framework for AI Integration

Use this three-stage approach to keep students thinking at every step of the AI interaction process.



### Before AI

Students think first. Form ideas, draft arguments, and set a clear purpose before engaging with AI tools.



### During AI

Students evaluate and question. Critically assess AI responses, identify gaps, and make intentional decisions.



### After AI

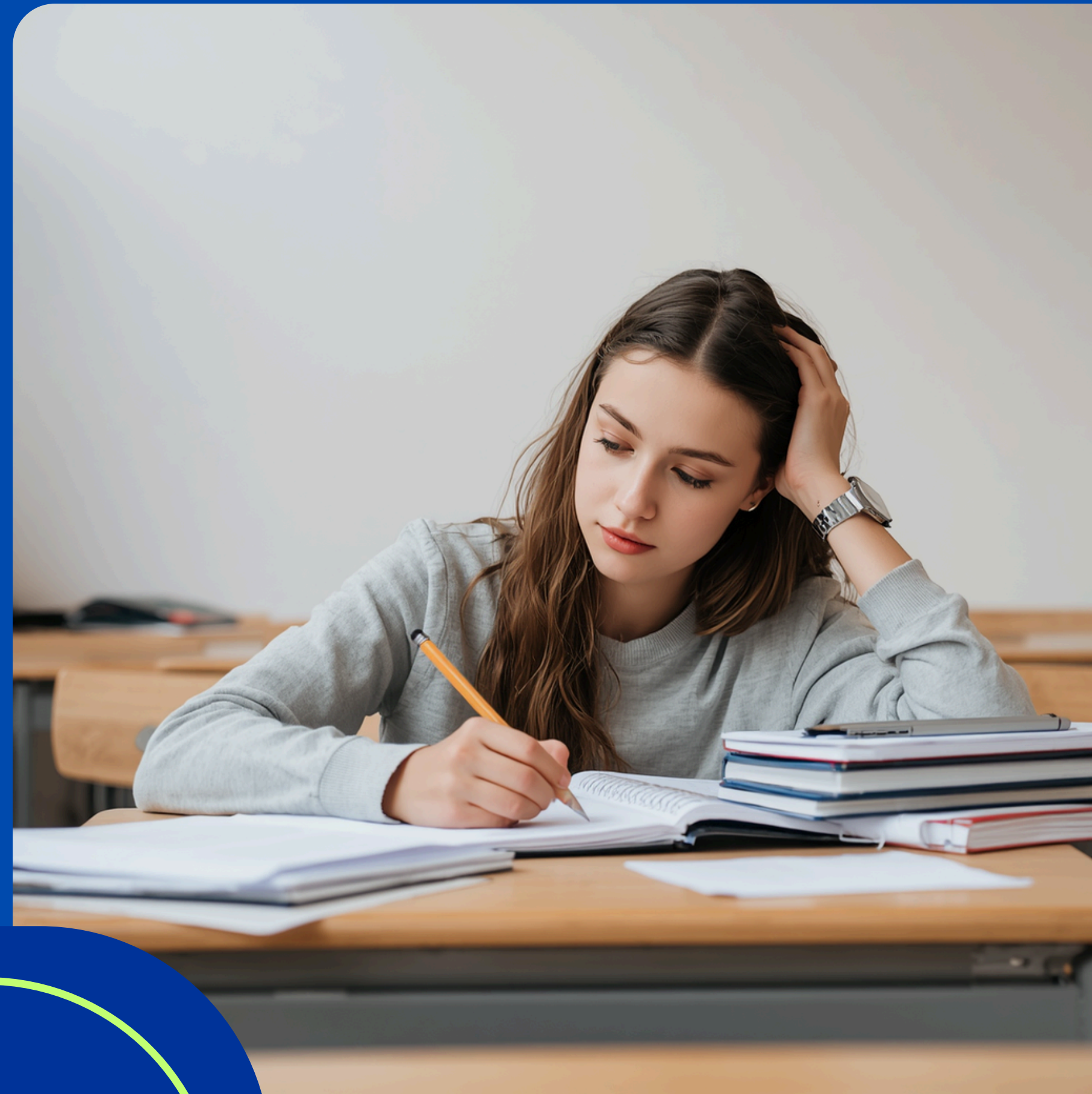
Students revise, reflect, and justify. Own the final product by refining ideas and explaining their reasoning.

# Classroom Example

## #1:

### What Thinking Happens Before AI Use?

Students brainstorm independently, outline their ideas, and identify what they already know, before any AI interaction begins. How do students prepare to engage thoughtfully?



# Classroom Example #2: Using AI to improve Writing and Thinking

## Active Engagement While Using AI

What decisions do students make during AI use? How do they evaluate AI responses, question assumptions, and maintain their own voice throughout the process?

EXAMPLES



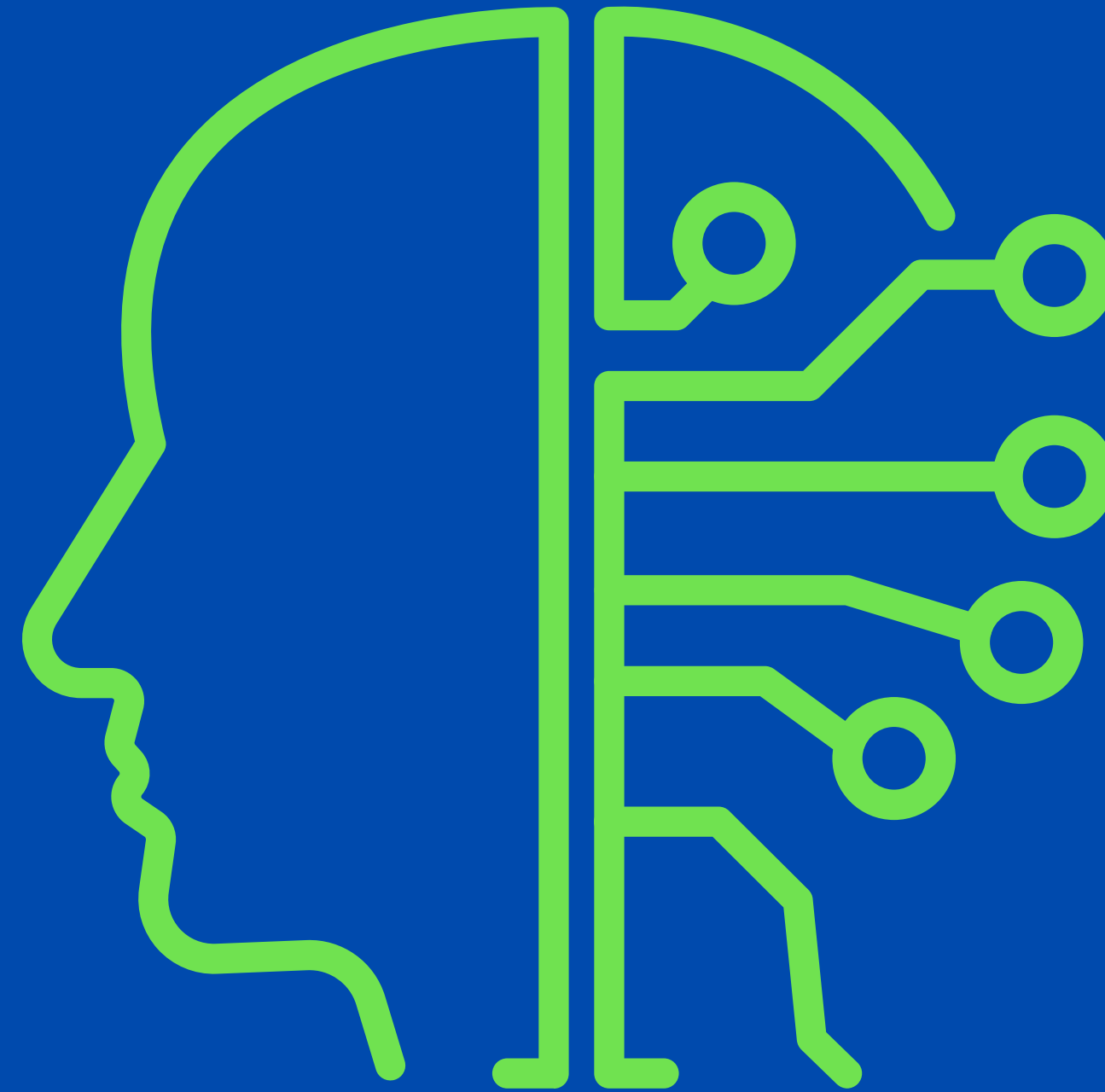
## During AI: Students Remain the Decision-Makers

### Use AI To:

- Ask questions
- Challenge reasoning
- Identify gaps
- Suggest alternatives
- Provide feedback

### Students Must Still:

- Evaluate
- Decide
- Justify
- Revise
- Reflect



### Guiding Question

"Who is making the important decisions—the student or the AI?"

# Classroom Example #3: Using AI after Writing

Reflection, Revision &  
Student Ownership

EXAMPLES



## AFTER AI: The Real Learning Happens Here

### Students Use AI To:

- Receive feedback
- Check organization
- Explore perspectives
- Identify gaps
- Review evidence

### Students Must Then:

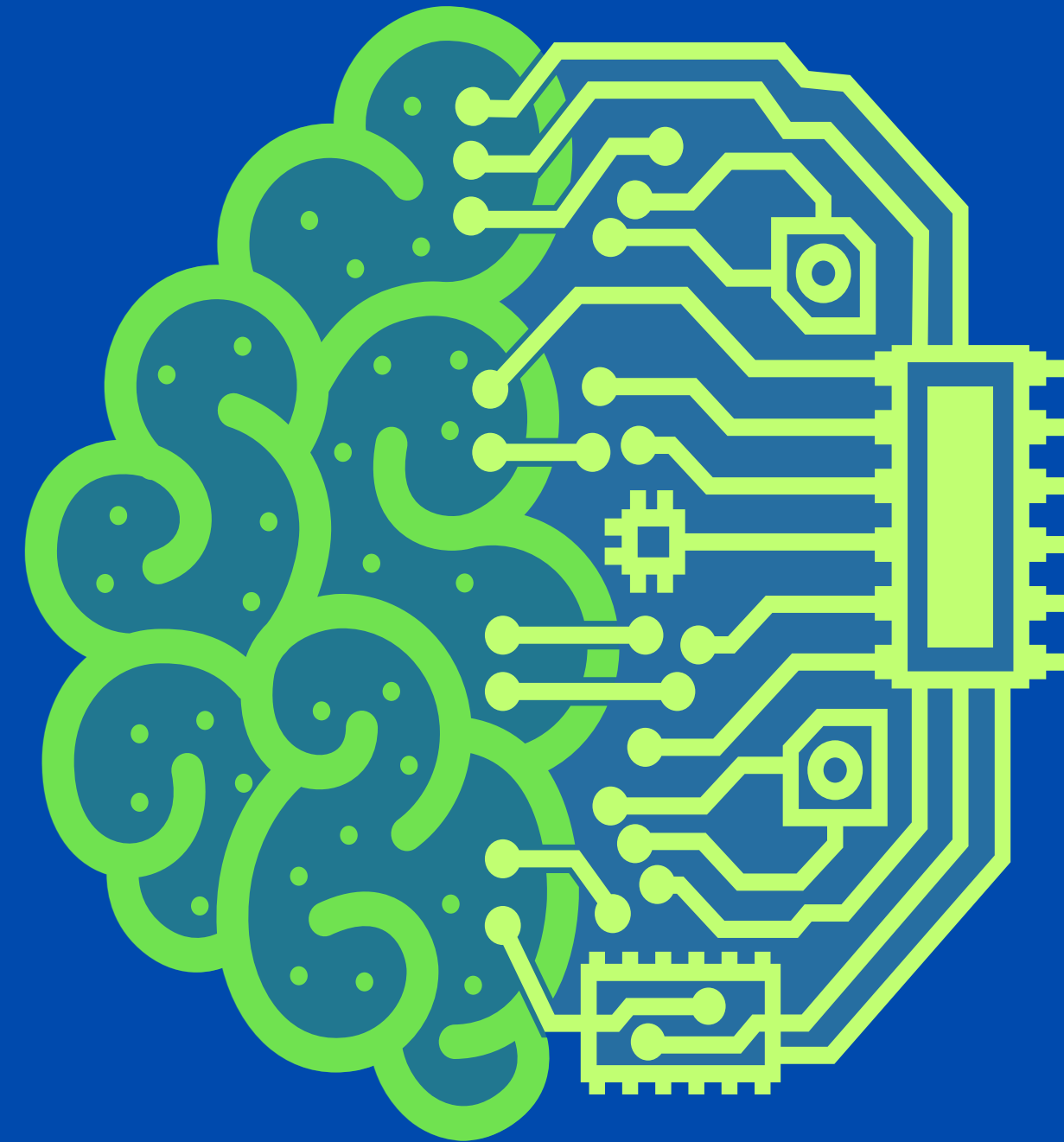
- Evaluate
- Accept or reject suggestions
- Justify decisions
- Revise thoughtfully
- Reflect on learning

### Guiding Question

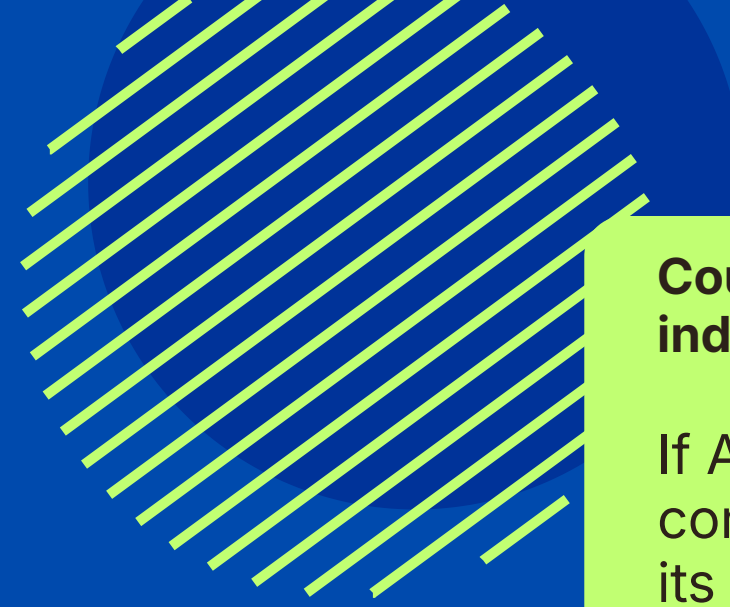
"Can students explain why they made each revision?"

If they can, they're thinking critically.

If they can't, AI may be doing too much of the work.



**The goal is not just to produce a stronger piece of writing; the goal is to produce a stronger thinker.**



# A Simple Test: Does This Assignment Require Thinking?

Use these four questions to evaluate whether your assignment demands genuine student thinking—or if AI could complete it without any real cognitive effort.

**Which question(s) would improve assignments in your classroom?**

**Could AI complete this independently?**

If AI can fully complete the task on its own, the assignment may not require meaningful thinking. Consider redesigning to add a cognitive layer students must own.

**Where must students make decisions?**

Strong assignments require students to make choices: what to include, how to frame an argument, which evidence to prioritize. These decisions cannot be outsourced.

**Where must students explain their thinking?**

Look for moments where students must articulate their thought process—not just produce an answer. Can they describe why and how they arrived at their conclusion?

**Where must students justify reasoning?**

If any of these elements are missing, a redesign may be needed. Add reflection prompts, decision points, or justification requirements to restore rigor.

# Practical Resources

Tools for Immediate  
Classroom Use

## **AI Reflection Prompts**

Structured prompts that guide students to evaluate, question, and reflect on their AI interactions and thinking process.

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## **AI Classroom Norms**

Ready-to-use agreements and expectations that establish responsible, transparent, and ethical AI use in your classroom.

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## **Ethical AI Checklist & Rubric**

"Does This Assignment Require Thinking?" rubric helps educators evaluate tasks and redesign for deeper student engagement.

Use these resources to integrate ethical AI practices and critical thinking into your classroom starting tomorrow.

# Practical AI Tips and tricks for you!

Tools for Immediate  
Classroom Use that will save  
you time and hold your  
students accountable.

- Be transparent with students about how you use AI! It builds trust and shows ethical use.
- Have students complete and turn in work on Google Docs if possible; there are several free checks here.
- **Revision History:** (A free Google Chrome extension)  
Example
- **Brisk:** Another free or paid Google Link that I love!
- One thing that I do that has saved me enormous time, and students have benefited greatly: I use AI to give comments on students' rough drafts. I comment on papers based on the rubric, and students evaluate that data and use the suggestions to improve writing.
- It saves time! The turnaround is much faster
- Students know this process
- Students know that the rough draft grade is based on completion/not content
- They must use the information to edit their papers.
- They also write a reflection after turning in the final essays, about how they used the comments.

EXAMAPLE  
EXAMPLE 2

# Questions & Discussion

## Let's Talk — Your Voice Matters

Share your questions, concerns, successes, and ideas about AI in education. Every perspective enriches our collective thinking.



# Key Takeaways

Core Messages to Carry Forward

**Future-ready learners need both AI literacy and strong critical-thinking skills to thrive.**

## Teach Ethical AI Use First

Ethical AI use must be taught before students ever open an AI tool. Provide a clear framework covering transparency, integrity, ownership, and digital citizenship.

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## AI Supports Thinking—Not Replaces It

AI is a scaffold, not a substitute. When used responsibly, AI helps students explore ideas, evaluate information, and strengthen their reasoning—never bypass it.

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## Critical Thinking Grows Through Practice

Deep thinking develops through evaluation, reflection, revision, and decision-making. Assignments must require students to explain, justify, and own their thinking.

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## Student Voice & Ownership Are Essential

Students must remain the authors of their ideas, decisions, and revisions. AI may assist the process, but the learning—and the voice—always belongs to the student.

# Thank You!

## Closing Thought

**"The future isn't about students competing with AI. It's about helping students think, question, create, and communicate effectively while using AI responsibly."**



Email

[wendycurty@davidson.k12.nc.us](mailto:wendycurty@davidson.k12.nc.us)

**[Additional Resources for participants](#)**